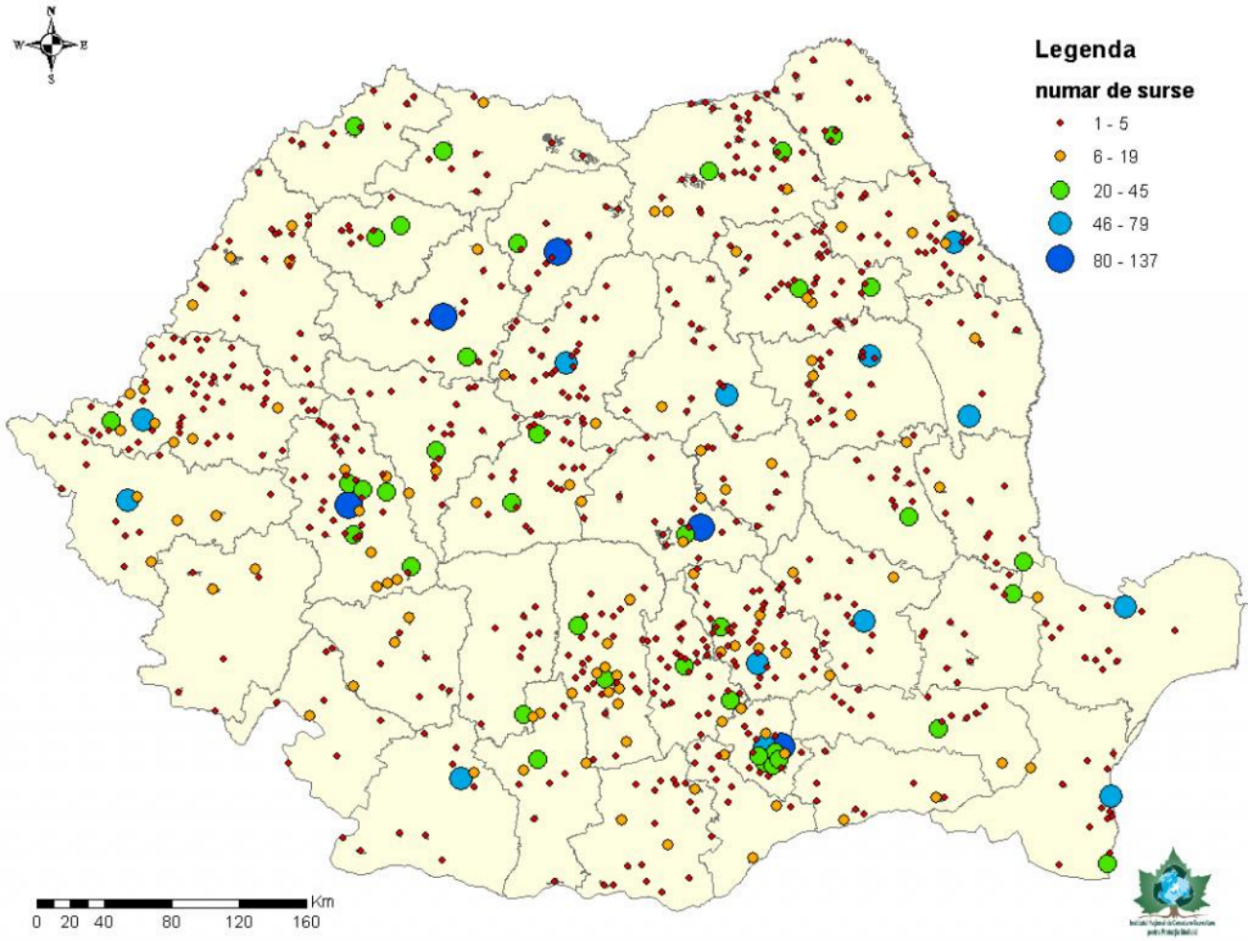
Inventory of combustion plants with a rated thermal input <50MW and fixed engines with spark ignition or compression and the assessing their contribution emissions to total emissions of air pollutants



Knowing the quantities of substances emitted into the atmosphere is a necessary and fundamental reference in the development of environmental protection policies and in the monitoring of a phenomena such as acid rain, air quality degradation, greenhouse effect and climate change, ozone depletion, deterioration and affecting the appearance of buildings, exposure of the population and ecosystems to hazardous substances, etc.

Low combustion efficiency (especially for boilers with installed power under 1MW), the poor quality of the fuel used (high sulfur content, low calorific power, high content of

impurities in fuels, etc.) and lack of pollutant substances restraint systems make that the low-power instalations to be considered the major sources of pollution. Contributions of small combustion plants to total emissions vary and depend on the type of pollutants and the geographical area.

Within the project, an interactive dialogue with ImA holders and stationary engines was carried out, the study team contributing significantly to the information-awareness process of ImA holders on specific issues concerning the recording and reporting of data relating to technical characteristics and the data to be reported for achieving the local emission inventories.

The working methodology included the identification of emission sources, the elaboration of procedures necessary to obtain data for the inventory of small combustion plants and static thermal engines by producing questionnaires for ImA inventory, collection, verification of data obtained, data quality assurance, processing and interpretation of collected data.

- **Partners**
  CEPROCIM S.A.

- **Project Coordinators**
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  Eng. Deák György PhD. habil, Scientific Researcher I

- **Period**
  15.03.2013 – 27.05.2013

- **Financed via**
  Ministry of Environment and Climate Change

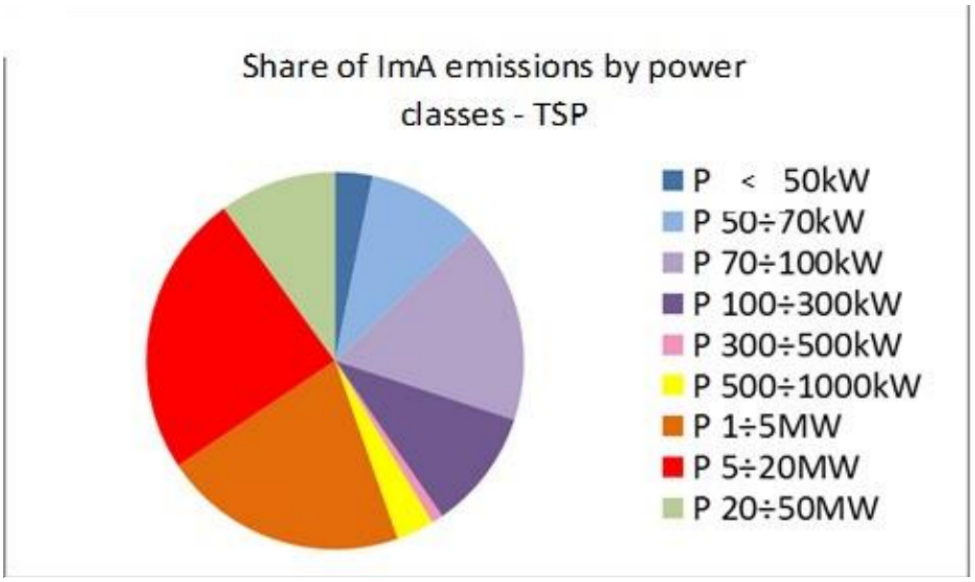
Objectives

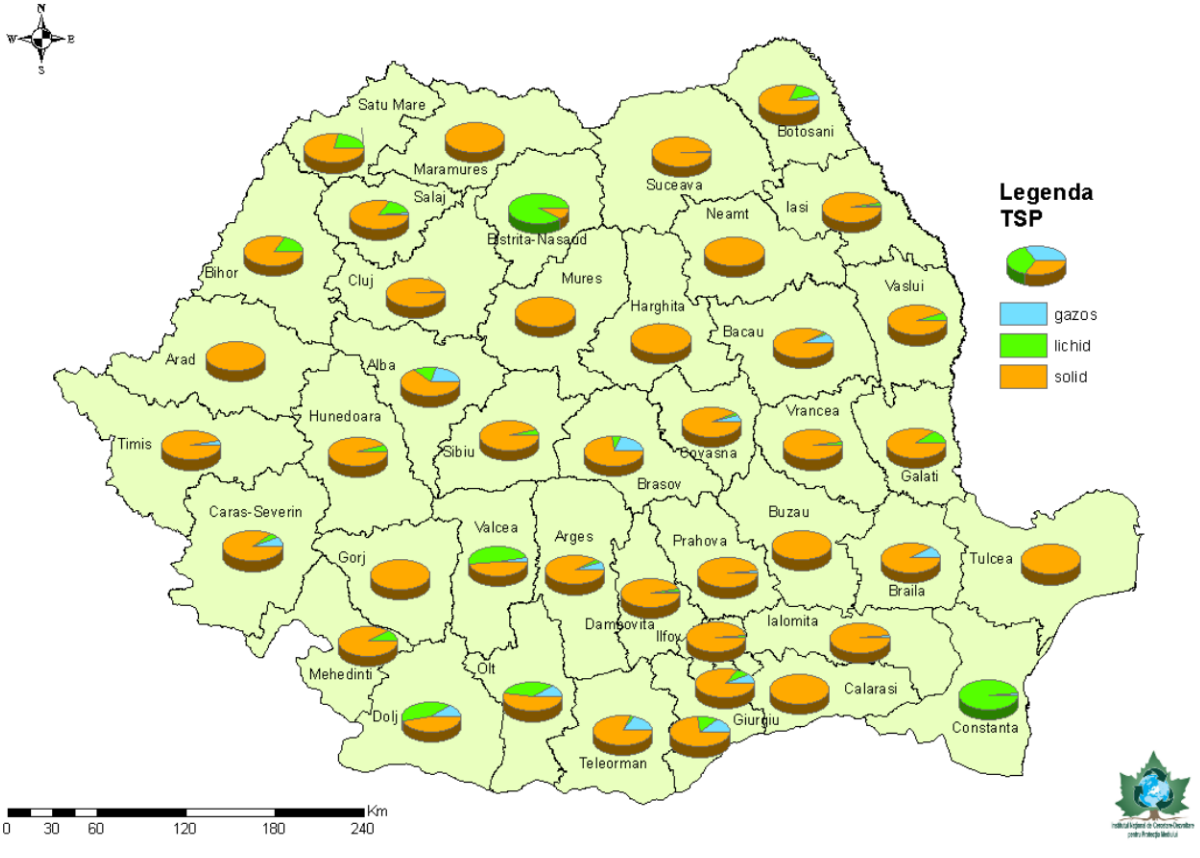
The paper represent a synthesis of the activities and the results obtained in order to elaborated the inventory of small combustion plants and stationary motors with installed power of less than 50 MW (activities classified according to the NFR Nomenclature for NFR 1A4 code classification – Burnings in small power stationary sources and NFR 1A2 – Burnings in Manufacturing industries and Construction) at the level of 2010.

It has also been achieved, the inventory of pollutant emissions from small combustion plants and respectively from stationary engines (SO2, NOX, PM10, PM2,5), as well as the assessment of the weight of these emissions to the national annual emissions, at the level of of the year 2010.

Results

Combustion installations for individual heating of dwellings and non-residential spaces are sources of emissions of air pollutants with an important contribution to national emission of suspensions. These are the fine suspensions: 98.71% – smaller than 2.5 microns and 88.15% – smaller than 10 microns (the appreciation of the percentages of participation of ImA in the national emission included the emission of thermal motors stationary)
It's about of fine suspensions: 98.71% – with dimensions smaller than 2.5 microns and 88.15% – with dimensions smaller than 10 microns (in the appreciation of the percentages of participation of ImA in the national emission has been included the emission of the stationary thermal motors).
The main combustion installations generating suspensions in the atmosphere are the stoves – 98.89% of the total emission of suspended powders and the apartment's thermal plants – 1.11% of the total emission of the small combustion plant suspensions. Fuels used almost exclusively in individual stoves and apartment heating boilers are firewood and natural gases: 95.32%, of the total fuel consumption of these equipments.


Share of ImA emissions by power classes - TSP
P < 50kW
P 50÷70kW
P 70÷100kW
P 100÷300kW
P 300÷500kW
P 500÷1000kW
P 1÷5MW
P 5÷20MW
P 20÷50MW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Valcea
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Prahova
Tulcea
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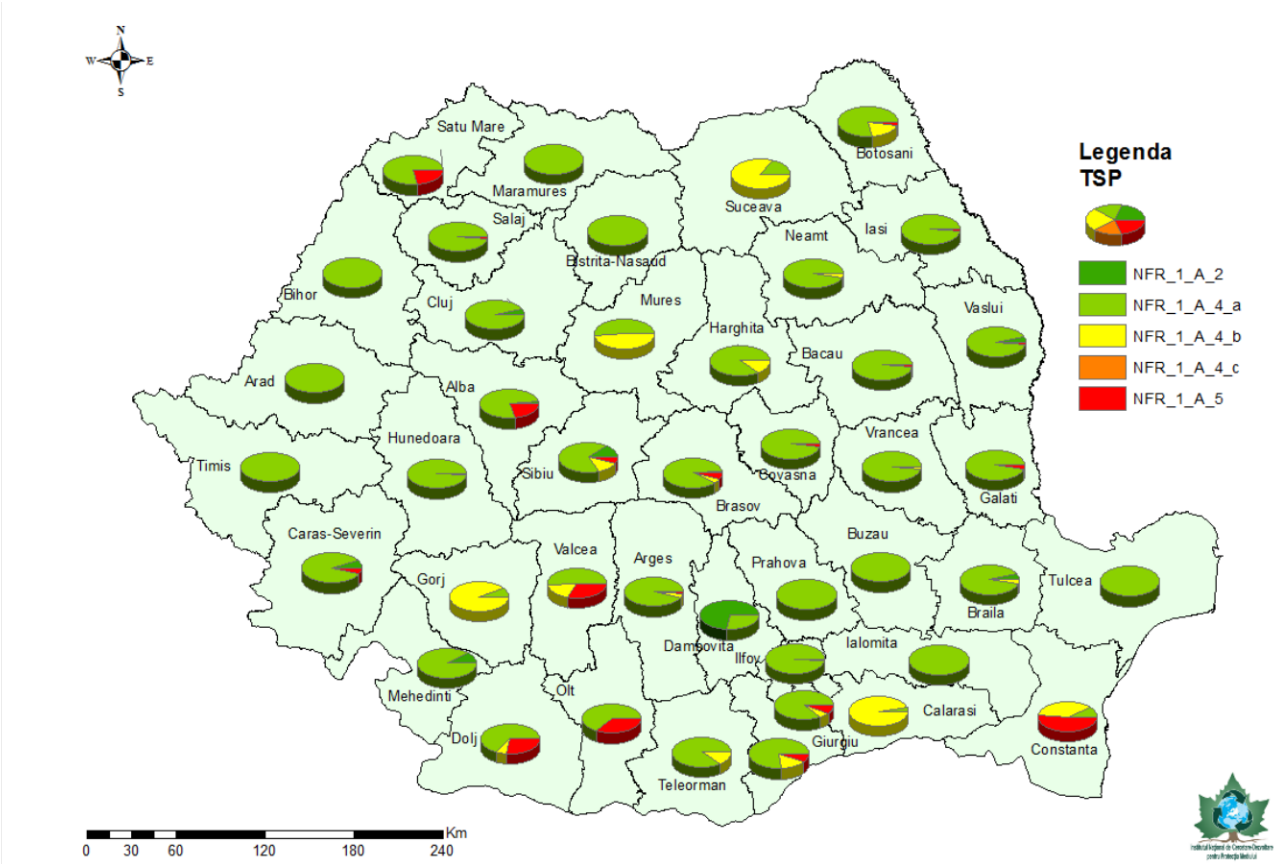
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